

WALMART INC. (“Walmart”) and JETSON ELECTRIC BIKES, LLC (“Jetson”),
(collectively “Defendants”), by and through their attorneys, Crowley Fleck PLLP and McCoy

Leavitt Laskey LLC, hereby submit their response in opposition Plaintiffs' Motion to Exclude Expert Testimony of Brian Strandjord, PE.

ARGUMENT

Plaintiffs contend that Defendants' proffered licensed professional electrical and mechanical engineering expert, Brian Strandjord, P.E., CFI, CFEI, lacks the qualifications to opine on the evidence of electrical arcing found outside Plaintiffs' home and the lack of evidence of electrical arcing found inside Plaintiffs' home. Plaintiffs further contend that Strandjord's opinions are not based on sufficient facts, data, or methodology such that a full and adequate analysis could be rendered. Finally, Plaintiffs contend that arc mapping is unreliable science that Strandjord cannot use in determining the fire's area of origin. Plaintiffs are wrong. Arc mapping, which is the result of an arc survey, is used to document the locations of arc sites on an electrical system to aid in the determination of fire origin and spread and has been recognized as proper methodology in NFPA 921 since 2001. Strandjord has the requisite knowledge, skill, training and education to render electrical engineering opinions, and his opinions meet the reliability and admissibility standards set forth by Rule 702. Further, Strandjord conducted his investigations pursuant to the methodology laid out by NFPA 921 in conjunction with the other investigators present at the numerous site inspections and laboratory examinations for all interested parties. Finally, Strandjord's opinion is necessary for a jury to understand the technical and scientific nature of electrical arcing and its implications as related to this case.

Moreover, pursuant to U.S.D.C.L.R. 7.1(b)(1), Plaintiffs were required to meet and confer with Defendants regarding all non-dispositive motions. Specifically, Rule 7.1(b)(1) states "[t]he moving party shall state in the motion the specific efforts to comply with this rule and the position of the opposing party. A motion may be summarily denied for failure to certify conferral ..."

U.S.D.C.L.R. 7.1(b)(1)(A). Plaintiffs did not meet and confer on this motion prior to filing it and did not include the required meet and confer statement in the motion – likely because they did not satisfy that pre-filing requirement. As such, Plaintiffs’ motion can be summarily denied due to these procedural defects before the Court even considers the motion’s merits – which are similarly lacking.

I. STRANDJORD’S OPINION MEETS THE STANDARDS SET FORTH IN RULE 702 FOR EXPERT TESTIMONY.

The Court undertakes a three-part analysis to determine if an expert’s opinion meets Rule 702’s standard for reliability and/or admissibility: whether (1) the witness is qualified to be an expert; (2) the opinion is based upon reliable data and methodology; and (3) the expert’s testimony on a particular issue will assist the trier of fact. *Nimely v. City of New York*, 414 F.3d 381, 62 Fed.R.Serv.3d 747 (2nd Cir. 2005). For the reasons set forth below, Strandjord’s opinions are both reliable and admissible.

A. Strandjord’s knowledge, skill, experience, training, and education as both a licensed professional mechanical and electrical engineer, as well as a NAFI and IAAI certified fire investigator, qualify him to offer arc survey and mapping opinions.

A witness is qualified as an expert by knowledge, skill, experience, training, or education. *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 508 U.S. 579, 588, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993). Plaintiffs contend that Strandjord lacks the education or experience necessary to make him an expert in the field of arc mapping because he is not a metallurgist. (Doc. 95). Specifically, Plaintiffs allege that Strandjord has no metallurgical-related education or scientific expertise without citing any controlling authority supporting that Strandjord somehow needs metallurgical expertise to render his opinions in this case. Further, Plaintiffs disregard that Strandjord is both an electrical *and* mechanical engineer. (LaFlamme Dec. ¶6, Ex. 1: Strandjord Dep. 7:8-15). Strandjord’s educational background includes courses in heat transfer, thermodynamics, and

materials sciences at the University of Colorado. (LaFlamme Dec. ¶6, Ex. 1: Strandjord Dep. 8:7-17). Additionally, Strandjord took classes in arc mapping through the International Association of Arson Investigators (“IAAI”) and National Association of Fire Investigators (“NAFI”), as well as various online courses. (LaFlamme Dec. ¶6, Ex. 1: Strandjord Dep. 10:11-23). He obtained certifications from all courses he took. (LaFlamme Dec. ¶6, Ex. 1: Strandjord Dep. 11:6-23). Further, Strandjord has over ten years of experience as both a mechanical and electrical engineer performing failure, fire, explosion, and accident investigations, including performing arc surveys and arc mapping. (LaFlamme Dec. ¶6, Ex. 1: Strandjord Dep. 9:4-14).

In addition, Strandjord is not offering opinions as to the manipulation, extraction, processing, or properties of metals, as a metallurgist would; rather, Strandjord examined the electrical system and electrical components to determine if an arcing event occurred along or within the electrical copper wires at the Plaintiffs’ residence. As an electrical engineer, Strandjord has specialized knowledge of electrical circuits and electrical systems, including circuit breakers, to evaluate not just evidence of electrical arcs, but the entirety of the circuitry system in Plaintiffs’ residence. In fact, Plaintiffs chose to cherry pick Strandjord’s arc mapping analysis instead of acknowledging arc mapping is a subset of Strandjord’s entire analysis of the electrical system at the Plaintiffs’ residence. Therefore, Strandjord’s specialized knowledge, skill, experience, training, and education as both a mechanical *and* electrical engineer establish that he has the qualifications to offer opinion testimony as to both the electrical circuitry and any evidence of arcing found, or not found, at Plaintiffs’ residence.

B. Strandjord applied NFPA 921’s generally accepted methodology to his analysis and opinion of the physical evidence.

Courts readily accept National Fire Protection Association (“NFPA”) 921 as a barometer for determining the reliability of methods used by fire investigation experts. *Philmar Dairy, LLC*

v. Armstrong Farms, No. 18-CV-0530 SMV/KRS, 2019 WL 3070588, at *9 (D.N.M. July 12, 2019) (collecting cases); *Ball Corporation v. Air Tech of Michigan, Inc.*, 2022 WL 1801120, at *5 (citing *NFPA 921* §4.2). NFPA 921 is a consensus document jointly authored by numerous individuals in the fire investigation community. (LaFlamme Dec. ¶6, Ex. 1: Strandjord Dep. 83:13-22). Section 1.3 of NFPA 921 (2024) states, “this document is designed to produce a systematic, working framework or outline by which effective fire and explosion investigation and origin and cause analysis can be accomplished. It contains specific procedures to assist in the investigation of fires and explosions. These procedures represent the judgment developed from the NFPA consensus process system that if followed can improve the probability of reaching sound conclusions.” (LaFlamme Dec. ¶15, Ex. 10: NFPA 921, §1.3 (2024)).

Plaintiffs attack the arc mapping methodology used by Strandjord by calling it a “pseudo-science technique” and stating that “peer-reviewed literature discredits the use of arc mapping for the purpose of determining the origin of a fire.” (Doc. 94, pg. 2). In making these arguments, Plaintiffs rely on outdated and unscientific papers and ignore that the methodology employed by Strandjord has been utilized by electrical engineers for over 100 years within their scope of performing electrical fault analysis, and has been recognized by the NFPA in NFPA 921 *Guide for Fire and Explosion Investigation* for decades. For example, Plaintiffs rely upon a law review article written by Attorney May and David Icove for their attack on the arc mapping methodology used by Strandjord.¹ Icove co-authored the 8th edition of Kirk’s *Fire Investigation* (“Kirk’s”), a well-recognized treatise of fire investigation which serves as a textbook “providing interoperation [sic] of the concepts presented in the latest editions of NFPA *Guide for Fire and Explosion Investigations* (NFPA 921), *Standard for Professional Qualifications for Fire Investigator* (NFPA

¹ A law review article is not a scientific article.

1033), and related standards of care.” (LaFlamme Dec. ¶7, Ex. 2: Preface to Kirk’s, 8th edition). The preface to Kirk’s states “concepts and investigative techniques presented are supported by peer-reviewed references and have already gained general acceptance in the fire and explosion field.” (Id.). Contrary to Plaintiffs’ reliance on a law review article written by Icove that arc mapping is a “pseudo-science technique”, Icove states, “the plotting of electrical arcing in electrical wiring found at a fire scene is valuable in testing hypotheses about possible areas of origin.” (Id.).

Plaintiffs also rely on two opinion review papers dated 2017 and 2018 by Vyto Babrauskas, who, incidentally, was a peer-reviewer for Kirk’s that called arc mapping “valuable”. Plaintiffs fail to advise this Court about the controversies surrounding the opinions in the papers by Babrauskas, who is not an electrical engineer. Specifically, and in response to the claims made by Babrauskas in his paper titled, *Arc Mapping: New Science, or New Myth?* presented in 2017 at a fire conference, the United States Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) issued a Technical Bulletin addressing the paper’s misleading interpretations and analysis of the published literature. (LaFlamme Dec. ¶8, Ex. 3: ATF Bulletin). Likewise, in his 2018 paper titled *Arc Mapping: A Critical Review*, Babrauskas misused and misapplied data generated by Dr. Nick Carey, Ph.D. to come to incorrect conclusions regarding the scientific nature and efficacy of arc mapping methodology. As noted by Dr. Carey in a 2020 article published by the International Association of Arson Investigators (IAAI), “recent review papers by Babrauskas have erroneously and incorrectly analyzed the results of our experimental fires by using the data generated from these experiments out of context. As a result, incorrect conclusions have been drawn and these have been used to unjustifiably criticize the overall arc mapping methodology without, in our view, any scientific justification for doing so. Additionally, in 2018, Dr. Babrauskas agreed that he has

not undertaken any of his own arc mapping experiments, or used arc mapping methodology during fire scene examinations that he had undertaken professionally.” (LaFlamme Dec. ¶¶9-10, Ex. 4: Carey 2020 Article; Ex. 5: Novak ATF Letter to Editor Response).

Further, the 2017, 2018 and 2020 papers cited by Plaintiffs all note the lack of published research on the accuracy of arc mapping methodology. (LaFlamme Dec. ¶11, Ex. 6: May and Icove 2020 Paper, pg. 69). Plaintiffs fail to inform this Court of three recent peer-reviewed published articles in 2023 and 2024 by licensed Master Electrician and Professional Electrical Engineer Dr. Mark Svare that extensively studied the accuracy and error rate of arc mapping methodology. (LaFlamme Dec. ¶¶12-14; Ex. 7: *Forensic Examination of Post-Fire Damaged Electrical Conductors by Using X-Ray Radiographs*, 2023; Ex. 8: *Forensic Examination of Post-Fire Damaged Electrical Conductors by Quantitative Measurement*, 2023; Ex. 9: *Development of a Systematic Methodology for Reconstructing the Fire Scene by Using The Electrical System*, 2024). These three articles stem from doctoral research performed by Dr. Mark Svare where “qualitative and quantitative data was collected by surveying 912 respondents within the fire investigation community across four test conditions.” (LaFlamme Dec. ¶14; Ex. 9: *Reconstructing the Fire Scene*). Dr. Svare’s research culminated in his 17,000 plus page dissertation including statistically analyzed data.

Contrary to Plaintiffs’ argument that the arc mapping methodology employed by Strandjord is merely subjective and does not meet the *Daubert* factors, Svare’s research demonstrated that with training on identifying electrical conductor damage, including how to visibly identify and distinguish the difference between arc melted and fire melted post-fire damaged electrical conductors, and on applying electrical conductor damage data to electrical distribution systems, fire investigators who did not previously have the advanced electrical

engineering training of Strandjord correctly determined both the origin and fire spread based on the electrical system 95% of the time. Importantly, Svare's research demonstrated that the fire investigators correctly made these determinations by using arc surveys, arc mapping, and understanding the involved electrical systems (as done by Strandjord in this case), not by using metallurgical techniques as urged by Plaintiffs in their criticisms of Strandjord. Svare's research shows the arc mapping utilized by Strandjord meets *Daubert* factors where the methodology has been tested, has been subject to peer review and publication, has a known or potential rate of error, and is generally accepted in the relevant scientific community.

Plaintiffs also fail to inform this Court that the internationally recognized and generally accepted standard of care for fire investigation (NFPA 921) utilizes, and has utilized for decades, the scientific methodology of arc mapping. Specifically, noting the location of arc sites at the fire scene was first introduced to the fire investigation community within NFPA 921, 2001 ed., though electrical engineers like Strandjord have been researching electricity, electrical systems, arcing faults, and arc flash for more than 100 years. (LaFlamme Dec. ¶13; Ex. 8: *Quantitative Measurement* at page 41). NFPA 921 recognizes that “[a]n electrical fault will usually produce characteristic damage that may be recognized after a fire. Evidence of these faults may be useful in locating the area of origin.” (LaFlamme Dec. ¶15, Ex. 10: NFPA 921, §6.6.1 (2024).

Strandjord not only utilized the generally accepted methodology for his investigation pursuant to NFPA 921, he also applied that method reliably to the physical evidence. In particular, and as detailed in Strandjord's report and deposition testimony, Strandjord performed, *inter alia*, background research on the property and loss, inspected and documented the property including its electrical system and electrical conductors at the site on May 18 and August 2 and 3, 2022, analyzed and documented the preserved artifacts including the electrical conductors at a two-day

lab examination, analyzed the report, photographs, audio, and video files from the Sweetwater County Sheriff's Office, examined a 3D Matterport scan of the property, and reviewed numerous transcripts of depositions taken in the case in formulating his opinions in this case. (LaFlamme Dec. ¶16, Ex. 11: Strandjord Report pgs. 6-7; ¶6, Ex. 1: Strandjord Dep. 50:7-52:22). Strandjord also reviewed and analyzed the branch circuit conductors in bedroom 4 (G.W. and L.W.'s bedroom) and outside bedroom 4 where a polymer smoking shed was located to evaluate the two potential areas of origin identified by the various fire investigators. (LaFlamme Dec. ¶6; Ex. 1: Strandjord Dep. 50:7-52:22). Evidence of electrical arcing on conductors on the smoking shed was discovered, indicating that fire was present in the shed before the electrical service triplex was severed. (LaFlamme Dec. ¶6, Ex. 1: Strandjord Dep. 52:4-14). Specifically, when the service triplex (located above the smoking shed) melted and severed, there was no longer any electrical energy in the home and there was no possibility of electrical arcing on conductors powered by the home. (LaFlamme Dec. ¶6, Ex. 1: Strandjord Dep. 54:19-20, 71:1-5). Therefore, for there to be evidence of electrical arcing in the smoking shed, it had to have occurred prior to the time that the service triplex was severed because arcing does not occur on non-energized lines. (LaFlamme Dec. ¶6, Ex. 1: Strandjord Dep. 69:19-21, 72:19-22). Similarly, the absence of any evidence of electrical arcing in the fire damaged branch circuit conductors in Bedroom #4, and the absence of any tripped circuit breakers in the electrical panel for the Residence was consistent with those circuits inside the Residence being de-energized at the time they were attacked by the fire. (Id.) Further, the branch circuits in the Residence would be de-energized after the service triplex conductors were melted and severed. (Id.)

Plaintiffs are further critical that Strandjord did not inspect the home's branch circuits outside of those in Bedroom #4. (Doc. 95). Plaintiffs' criticisms misunderstand the home's

electrical service and system and the methodology of NFPA 921. As explained by Strandjord “once that service triplex melted and was severed, there would no longer be an electrical service to the residence; there could no longer be any electrical energy in any of the branch circuits in the residence.” (LaFlamme Dec. ¶6, Ex. 1: Strandjord Dep. 52:1-22). This is consistent with NFPA 921, which recognizes that no arcing can occur beyond a point where power is cut off. (LaFlamme Dec. ¶15, Ex. 10: *NFPA 921*: §6.6.8.3, 2024 ed). In other words, as a result of Strandjord’s knowledge, skill, training, education and experience with regard to electrical theory, electrical systems, NFPA 921, arc surveys, and arc mapping, Strandjord was able to determine that there was no electrical power to the home after the service triplex melted and, therefore, no electrical energy in any of the home’s branch circuits, which was consistent with the lack of evidence of arcing within electrical conductors within the home and the lack of any tripped electrical breakers. The only location where evidence of electrical arcing was found was in the smoking shed, meaning that the shed had electrical power before the service triplex melted and eliminated electrical power to the house. Accordingly, the fire had to have originated in the smoking shed.

C. Strandjord’s testimony will assist the trier of fact in understanding the relevance of the arcing to the fire.

Expert opinion testimony is admissible when the scientific, technical, or other specialized knowledge will assist the trier of fact in understanding or determining a fact in issue – essentially asking whether the expert’s testimony ‘fits’ the facts of the case goes to the relevancy of the testimony. *Graham v. Playtex Products, Inc.*, 993 F.Supp. 127, 130 (N.D.N.Y 1998) (citing *Daubert*, 509 U.S. 579). Moreover, “the ‘helpfulness’ standard incorporated in F.R.E. 702 means that the expert’s opinion must relate to an issue that is actually in dispute and must provide a valid scientific connection to the pertinent inquiry.” *Graham*, 993 F.Supp at 130 (citing Margaret A.

Berger, *Procedural Paradigms for Applying the Daubert Test*, 78 Minn.L.Rev. 1345, 1351 (1994)).

Strandjord's testimony as to his analysis of the home's electrical system within the context of a fire investigation is not the sort of knowledge or information that a lay person would readily understand. As such, Strandjord's testimony is necessary for the jury to understand the significance of electrical arcing found in the polymer smoking shed as compared to a lack of any electrical arcing found in bedroom 4 – G.W. and L.W.'s bedroom.

CONCLUSION

For the foregoing reasons, Plaintiffs' Motion to Exclude the Purported Expert Testimony of Brian Strandjord, PE should be DENIED. If this Court is inclined to grant Plaintiffs' motion, Defendants request that the Court conduct a Daubert evidentiary hearing and hear testimony directly from Brian Strandjord, P.E., CFI, CFEI on his qualifications, methodology, opinions, and bases for his opinions.

McCOY LEAVITT LASKEY LLC

Attorneys for Defendants, Jetson Electric Bikes,
LLC and Walmart Inc.

Dated: December 16, 2024

By: 

Eugene M. LaFlamme (*pro hac vice*)
Jared B. Giroux (*pro hac vice*)
Jillian L. Lukens (*pro hac vice*)
McCoy Leavitt Laskey, LLC
N19 W24200 Riverwood Drive, Suite 125
Waukesha, WI 53188
(P) 262-522-7000
elaflamme@MLLlaw.com
jgiroux@MLLlaw.com
jlukens@MLLlaw.com

and

Timothy M. Stubson, Wyo. Bar No. 6-3144
Brandon E. Pryde, Wyo. Bar No. 8-6883
Holly L. Tysse, Wyo. Bar No. 7-5553
Crowley Fleck, PLLP
111 West 2nd Street, Suite 220
Casper, WY 82601
(P) 307-232-6901
tstubson@crowleyfleck.com
bpryde@crowleyfleck.com
htysse@crowleyfleck.com